

In the Claims:

Please add claims 21-25 as indicated below.

1. (Original) A system, comprising:

a primary storage;

a backup storage;

a restore application configured to restore a set of files from the backup storage to the primary storage; and

a file server configured to, during said restore:

determine that one or more blocks of data of a file in the set of files needed by an application have not been restored; and

direct the restore application to restore the determined one or more blocks of data in response to said determination that the one or more blocks of data have not been restored;

wherein the restored one or more blocks of data are accessible by the application while said restore is in progress.

2. (Original) The system as recited in claim 1,

wherein the restore application is further configured to, prior to said restore, generate a map correlating destination locations on the primary storage to source locations on the backup storage for the set of files to be restored; and

wherein, to determine that one or more blocks of data of a file in the set of files needed by an application have not been restored, the file server is further configured to access the map to determine if the one or more blocks have been restored.

3. (Original) The system as recited in claim 1,

wherein, to direct the restore application to restore the determined one or more blocks of data in response to said determination that the one or more blocks of data have not been restored, the file server is configured to send a message to the restore application, wherein the message is configured to direct the restore application to restore the determined one or more blocks of data; and

wherein the restore application is further configured to restore the one or more blocks of data to the primary storage in response to the message.

4. (Original) The system as recited in claim 1, wherein the file server comprises a file system configured to perform said determination that one or more blocks of data of a file in the set of files needed by an application have not been restored and said direction of the restore application to restore the determined one or more blocks of data.

5. (Original) The system as recited in claim 1, wherein the file server comprises a file system and a driver coupled to the file system, wherein the driver is configured to perform said determination that one or more blocks of data of a file in the set of files needed by an application have not been restored and said direction of the restore application to restore the determined one or more blocks of data on behalf of the file system.

6. (Original) The system as recited in claim 1, wherein the restore application is further configured to update the map to indicate blocks of data that have been restored to the primary storage.

7. (Original) The system as recited in claim 1, wherein the system is a Storage Area Network (SAN) system.

8. (Original) A system, comprising:

means for restoring a set of files from a backup storage to a primary storage;

means for determining on a file server that one or more blocks of data of a file in the set of files needed by an application have not been restored during said restore; and

means for restoring the determined one or more blocks of data;

wherein the restored one or more blocks of data are accessible by the application while said restore is in progress.

9. (Original) A method, comprising:

a restore application starting a restore of a set of files from a backup storage to a primary storage;

during said restore:

a file server determining that one or more blocks of data of a file in the set of files needed by an application have not been restored; and

the file server directing the restore application to restore the determined one or more blocks of data in response to said determining that the one or more blocks of data have not been restored; and

the restore application restoring the determined one or more blocks of data;

wherein the restored one or more blocks of data are accessible by the application while said restore is in progress.

10. (Original) The method as recited in claim 9, further comprising:

prior to said restore, generating a map correlating destination locations on the primary storage to source locations on the backup storage for the set of files to be restored; and

wherein said determining that one or more blocks of data of a file in the set of files needed by an application have not been restored comprises accessing the map to determine if the one or more blocks have been restored.

11. (Original) The method as recited in claim 9,

wherein said directing the restore application to restore the determined one or more blocks of data comprises sending a message to the restore application, wherein the message is configured to direct the restore application to restore the determined one or more blocks of data; and

wherein the restore application restores the determined one or more blocks of data in response to the message.

12. (Original) The method as recited in claim 9, wherein the file server comprises a file system, wherein the file system performs said determining that one or more blocks of data of a file in the set of files needed by an application have not been restored and said directing the restore application to restore the determined one or more blocks of data.

13. (Original) The method as recited in claim 9, wherein the file server comprises a file system and a driver coupled to the file system, wherein the driver performs said determining that one or more blocks of data of a file in the set of files needed by an application have not been restored and said directing the restore application to restore the determined one or more blocks of data on behalf of the file system.

14. (Original) The method as recited in claim 9, further comprising updating the map to indicate blocks of data that have been restored to the primary storage.

15. (Original) A computer-accessible medium comprising program instructions, wherein the program instructions are configured to implement:

a restore application starting a restore of a set of files from a backup storage to a primary storage;

during said restore:

a file server determining that one or more blocks of data of a file in the set of files needed by an application have not been restored; and

the file server directing the restore application to restore the determined one or more blocks of data in response to said determining that the one or more blocks of data have not been restored; and

the restore application restoring the determined one or more blocks of data;

wherein the restored one or more blocks of data are accessible by the application while said restore is in progress.

16. (Original) The computer-accessible medium as recited in claim 15, wherein the program instructions are further configured to implement:

prior to said restore, generating a map correlating destination locations on the primary storage to source locations on the backup storage for the set of files to be restored; and

wherein said determining that one or more blocks of data of a file in the set of files needed by an application have not been restored comprises accessing the map to determine if the one or more blocks have been restored.

17. (Original) The computer-accessible medium as recited in claim 15,

wherein, in said directing the restore application to restore the determined one or more blocks of data, the program instructions are further configured to implement sending a message to the restore application, wherein the message is configured to direct the restore application to restore the determined one or more blocks of data; and

wherein the restore application restores the determined one or more blocks of data in response to the message.

18. (Original) The computer-accessible medium as recited in claim 15, wherein the file server comprises a file system, wherein the file system performs said determining that one or more blocks of data of a file in the set of files needed by an application have not been restored and said directing the restore application to restore the determined one or more blocks of data.

19. (Original) The computer-accessible medium as recited in claim 15, wherein the file server comprises a file system and a driver coupled to the file system, wherein the driver performs said determining that one or more blocks of data of a file in the set of files needed by an application have not been restored and said directing the restore application to restore the determined one or more blocks of data on behalf of the file system.

20. (Original) The computer-accessible medium as recited in claim 15, wherein the program instructions are further configured to implement updating the map to indicate blocks of data that have been restored to the primary storage.

21. (New) The system as recited in claim 1, wherein, prior to said determination that the one or more blocks of data have not been restored, the file server is further configured to:

receive a file access request from the application, wherein the file access request specifies a portion of the file to be accessed by the application, wherein the file access request is received while said restore is in progress;

identify a set of blocks of data of the file corresponding to the portion of the file, wherein the set of blocks comprises the one or more blocks.

22. (New) The system as recited in claim 21, wherein the file access request specifies the portion of the file using file level addressing, wherein said identifying the set of blocks comprises translating a file level address to a block-level address.

23. (New) The system as recited in claim 21, wherein the file server is further configured to:

identify, from among the set of blocks of data corresponding to the portion of the file, a particular block that does not have to be restored from the backup storage; and

provide access to the particular block of data to the application from the primary storage.

24. (New) The system as recited in claim 1, wherein the restore application is further configured to restore blocks of one or more other files of the set as a background task while restoring the one or more blocks in response to said directing by the file server.

25. (New) The system as recited in claim 2, wherein for at least one file of the set of files that comprises a plurality of data blocks, the map comprises a separate correlation of each block of the plurality of data blocks at the primary storage to a corresponding block at the secondary storage.